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## Department of Energy

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January 13, 1994

Mr. Wayne Pierre, Chief  
Federal Facility Section  
U.S. Environmental Protection Agency  
Region 10  
1200 Sixth Ave  
Seattle, WA 98101

Mr. Dean Nygard, Federal Facility Supervisor  
Idaho Department of Health and Welfare  
Division of Environmental Quality  
Community Programs  
1410 North Hilton  
Boise, Idaho 83706

SUBJECT: Transmittal of OCVZ Draft Final RI/FS - OPE-ER-004-94

Dear Mr. Pierre and Mr. Nygard:

Please find enclosed the draft final OCVZ RI/FS and our response to your comments.

If you have any questions, please call P.A. Cleary of my staff at (208) 526-8419.

Sincerely,

A handwritten signature in cursive script, reading "Lisa Green".

Lisa Green, Manager  
Environmental Restoration Program

Enclosures

cc: Ed Jones, EPA w/enc  
Daryl Koch, IDHW w/enc  
Shawn Rosenberger, IDHW w/enc  
Roger Jump, EM-441 w/enc

**TECHNICAL REVIEW COMMENTS**  
**IDAHO DEPARTMENT OF HEALTH AND WELFARE**  
**REVIEW OF REMEDIAL INVESTIGATION/FEASIBILITY STUDY REPORT**  
**RWMC OU7-08**

**COMMENTS**

**Comment 1:** Volume I. Page 1-14, bottom of page and fig. 1.4, page 1-15

Barometric pressure changes should be included in the list and figure 1.4 of processes and mechanisms that affect vapor transport.

**Response:** Barometric pressure changes have been included in the list but not the figure. The figure is not meant to, and does not, show all of the processes and mechanisms that affect vapor transport. The sentence referring to Figure 1-4 has been changed so as not to be confusing.

**Comment 2:** Section 4.1.1 Organic Compounds

According to the inventory and discussion of organic wastes disposed of at the SDA, the organic compounds are limited to that material from the RFP (743 and 744 Series sludges) disposed in 1966 through 1969 in pits 4, 5, 6, 9 and 10. This volume is also used as the source term for modeling assumptions as stated on page 5-32, bullet #3. This issue has relevance to the conceptual model and the RI in that the 1992 soil gas survey identified a large, elevated concentration, subsurface source of VOCs in the SE corner of pit 2, which was not identified in an earlier 1987 survey. Although pit 2 is in close proximity to pits 4 and 10, it is, nevertheless, outside of the disposal pits assumed to be "the" source of organic waste disposal. Therefore, the source disk model and source term that is used in the vapor transport modeling effort ignores this hotspot. Thus, the potential impact of this contamination on fluxes to groundwater is unknown.

**Response:** The relative degree of uncertainty for VOC sources in Table 5-6 has been changed from "Low" to a range of "Low to Moderate".

**Comment 3:** Section 4.2.2 Compliance with Applicable or Relevant and Appropriate Requirements (ARARs) Table 4-3, page 4-28

Accumulation and temporary storage of spent carbon units saturated with RCRA "listed" solvents, awaiting on-site or off-site regeneration and/or disposal, should invoke specific ARARs from IDAPA 16.01.05, "Idaho Rules, Regulations and Standards for Hazardous waste." Please address.

**Response:** This ARAR was added to the table as suggested, however, it should be noted that there is no documentation that the vapors found in the OCVZ operable unit are considered "listed" wastes. If the vapors were collected and resulted in spent carbon canisters, the canisters would most likely be considered "characteristic" wastes through the characteristic of toxicity, thus invoking this ARAR. However, as a result of the additional analysis conducted in support of the FS, carbon adsorption was not carried through as the representative process option for off-gas treatment. Instead, catalytic oxidation was utilized. The ARAR will be included in the table, however, as a requirement governing the handling of potential contaminant-saturated carbon, which may be generated through its use as the primary air treatment technology or as a "polishing" air treatment technology.

**Comment 4:** Section 4.4.1 Previous Investigations. Page 4-87, par. 2

Numerous typographical errors appear in this paragraph. They include "criterion", "sumpled", "baile/thief", "weperate:", and "potntial". Please tech edit the document.

**Response:** The text has been revised as requested.

**Comment 5:** Section 5.3.1.1 Conceptual Model. Page 5-14, par. 2, last sentence

It is stated that "The effects of preferential porosity are reflected in the model by tortuosity". The database, in our opinion, is inadequate to provide the level of detail sufficient to fully incorporate this modeling parameter input. Please modify the text to reflect the limitations of the database in simulating such detail or delete the statement.

**Response:** The sentence "The effects of preferential porosity are reflected in the model by tortuosity" has been deleted.

**Comment 6:** Section 5.3.1.1 Conceptual Model. Page 5-14, par. 3

It is stated that "VOCs partition from vapors into the aqueous phase as they diffuse through the vadose zone". Partitioning in the opposite upward) direction also occurs, depending on the relative concentrations in each fluid. This is not clearly indicated in the conceptual model. If the model accounts for partitioning in both directions, it should be clarified in the text.

It is also not clear, as infiltrating water moves through the waste, how or if the model initially partitions source organics to both the aqueous and vapor phases or if concentrations in the aqueous phase are only indirectly determined from vapor phase concentrations.

**Response:** Partitioning is not direction dependent, but occurs at all locations where contaminant is present. Therefore, the model accounts for partitioning in contaminants moving upward as well as downward. The text has been modified to explain this.

Modifications have also been made to the text (Section 5.3.1.1, paragraphs 2 and 3 which have been combined) to explain that while the source emits vapors, transport through and away from ten pit is controlled both by aqueous advection and vapor diffusion. Partitioning of contaminants is assumed to occur as they are released.

**Comment 7:** Section 5.3.1.2 Framework. Page 5-15, par. 2

The report states that the radius of the source in the model was increased from 100 to 200 meters "to avoid concentrating the contaminants in such a small area and more realistically account for the areally distributed sources." The rationale for increasing the size of the source disk appears inappropriate. The source areas may be smaller than the total pit dimension because of pit slopes and possible concentration of organic compounds in specific areas of the pits. It would seem more appropriate to attribute the size of the disk to an estimated size that was evaluated by simulating the resultant vapor concentrations caused by using different disk source diameters.

**Response:** We agree that the actual source areas may be smaller than the pit dimensions because of the pit slopes and possible concentration of VOCs in specific areas of the pits. However, VOCs diffuse from high concentration areas to low concentration areas. Since each pit was originally surrounded by uncontaminated soil gas, diffusion in the lateral direction would seem important. Placing the entire volume of VOCs into a simulated source pit equivalent in area to the sum of known source areas would be akin to placing the pits adjacent to each other. It was felt this would unnaturally inhibit lateral diffusion and raise concentrations in the source area because the amount of uncontaminated soil gas around the real pits would be smaller in the simulation. However, a sensitivity analysis revealed the size of the source had very little effect on the VOC fluxes to both the atmosphere and the aquifer (Section 5.3.1.5). Also see resolution to Comment 11.

**Comment 8:** Section 5.3.1.3 Assumptions. Page 5-32, bullet #5

This assumption is critical to the modeling of the OU. The specific contents and quantities of organic-laden waste from the Rocky Flats Plants (RFP) disposed in the pits is poorly documented. A new report (EGG-WM-10903, October 1993) further confirms this uncertainty for the RFP waste. As there is now additional uncertainty in the estimate of the total quantity, and possibly the types of waste mixtures, the

stated "non-mobility" of nonaqueous phase organics due to mixing with Texaco Regal Oil and absorbents is seen as a rather subjective. Also, see comment 15.

**Response:** The uncertainty concerning the mobility of non-aqueous phase organics in Table 5-6 has been changed from "Low" to "Low to High".

**Comment 9:** Section 5.3.1.3, bullet #6

This assumption relies on the more simple method of vapor transport, ie., diffusion, rather than advection, by stating that "barometric pressure fluctuations are also not likely to induce much movement of air deep in the vadose zone". However, test measurements of barometric pressure fluctuations at well 8902 (Appendix H) indicate relatively rapid responses to ground surface pressure changes at depths up to 229 feet below ground. The impact of these pressure changes at depth on air movement were never elaborated in the RI/FS Report. The possible effect of advective movement from air rotary drilling also merits discussion. The text should be modified to reflect these impacts. This bullet should also be compared with a later discussion on page 5-57.

**Response:** The statement "Barometric pressure fluctuations are also not likely to induce much movement of air deep in the vadose zone but could affect the VOC distribution near the surface" has been replaced with "The effect of barometric pressure fluctuations is not certain at this time. The push-pull effect of a rising-falling barometer may only serve to 'smear' the plume." This is consistent with statements about barometric pumping in Section 5.3.1.5. In addition, a statement regarding the influence of barometric pressure fluctuations on subsurface pressures as measured in well 8902 has been added to the text in Section 5.3.1.5.

**Comment 10:** Section 5.3.1.3, bullet #7

See comment 5.

**Response:** We do not see the relationship between either bullet #7 in Section 5.3.1.3, or bullet #7 on page 5-32 and comment 5. However, since the comment referred to an earlier comment, we assume the issue was resolved with the resolution to the earlier comment.

**Comment 11:** Section 5.3.1.4 Calibration. Page 5-38, continuing par

This paragraph states that the discrepancy between the observed and the modeled plume could not be resolved by increasing the tortuosity values to one. It is not apparent in the text that the size of the source

disk was altered in conjunction with the tortuosity values in an attempt to match modeled and observed data on the vapor plume. Please address whether altering the values of both variables (tortuosity and source disk size) could achieve adequate calibration of modeled to observed data.

**Response:**

Sensitivity of the model results to the size of the source area were investigated in Section 5.3.1.5. While it was determined that changing the source area size did not change fluxes to the atmosphere and aquifer, it did affect the size of the subsurface plume. However, altering the source size is not likely to improve the agreement using the method of well placement employed for making comparisons between model results and concentration data. This is because the relative well locations would remain the same distance from the edge of the simulated source disk. As the source gets larger, the plume gets larger, but the wells are placed farther away from the center of the source. This discussion has been included in Section 5.3.1.4.

**Comment 12:**

Section 5.3.1.5 Uncertainty. Page 5-45, Table 5-6

The "Low" range assigned to the relative degree of uncertainty for "Material Properties" in the first column appears to be too liberal in that we believe there is more uncertainty related to quantification of the input parameters needed for transport modeling. For example, the spatial distribution for porosity and saturation is limited. Saturation values for the interbed represent combined values for the 100 and 240 foot interbeds but appears to be heavily weighted by values collected for the 240 foot interbed. Apparently, only vesicular basalt was characterized and used as representative for the full stratigraphic section of the basalts. If advective transport is a primary mover then other variables are important and not well characterized such as the spatial distribution of hydraulic conductivity and effective porosity.

**Response:**

The "Low" range assigned to the relative degree of uncertainty for "Material Properties" in Table 5-6 has been changed to "Moderate". The statement "Spatial distribution of parameters is limited" has also been added to the text.

In reference to the statement in the comment that only vesicular basalt was characterized and used to represent basalt layers, both vesicular and non-vesicular basalt data were used.

**Comment 13:**

Table 5-6, Page 5-45

The "moderate" uncertainty range assigned to the air pathway for "vapor advection (pressure effects)" appears to be too liberal. This is because the sensitivity of the model output has not incorporated the

relative importance of the individual components which contribute to it (barometric pumping, air injection, and density effects). Therefore, a "moderate to high" uncertainty range should be assigned. (see 5-57, last paragraph). Please reconsider the assigned range.

**Response:** The relative degree of uncertainty has been changed from "Moderate" to a range of "Moderate to High" as suggested.

**Comment 14:** Table 5-6, page 5-46

The "low to moderate" uncertainty range assigned to "Groundwater Flow in the Vadose Zone" appears to be too liberal and a "low to high" range is more appropriate. It is known that the RWMC has undergone a previous flooding event and the excess water could have increased the downward movement of the VOCs in the estimated source term. Please reconsider the assigned range.

**Response:** The relative degree of uncertainty range has been changed from "Low to Moderate" to "Low to High" as suggested.

**Comment 15:** Table 5-6, page 5-46

The "low" uncertainty range assigned to "Non-aqueous Phase Organics are Immobile" appears to be too liberal and a "low to high" range is more appropriate. The rationale for a low range is that non-aqueous phase organics have not been detected. However, since no matrix samples have been "collected" from beneath the pits, the absence of these data does not unequivocally rule out the presence of this source of contamination. Therefore the range of uncertainty should be revisited.

**Response:** The relative degree of uncertainty has been changed from "Low" to a range of "Low to High" as suggested.

**Comment 16:** Section 6.1.2.4 Exposure Pathways, par. 2

Risk assessments at other sites with VOC contamination of groundwater have evaluated ingestion of food crops irrigated with well water. Although this pathway is not likely to contribute a major portion of the total risk, it cannot be dismissed simply by stating that the VOCs would rapidly volatilize during irrigation. Please provide a more quantitative evaluation of this pathway and risk values.

**Response:** Irrigation of homegrown fruits and vegetables would likely be done using a sprinkler. Since watering is usually only needed during dry or warm conditions, VOCs are likely to rapidly volatilize and not be incorporated into plants. Since quantitation of this small amount is not practical by modeling, a worst case is considered. If it is assumed that:

1) plants are watered by drip line and there is no evaporation, 2) plant uptake is 100 percent, 3) plant tissue is 100 percent water, and 4) homegrown produce is consumed year-round, then the ratio of plant ingestion to tap-water ingestion (and consequently, risk) is about 6 percent (0.122 L/2.0 L). Considering the chain of very conservative assumptions required to reach this value, it is more likely to be less than one percent.

**Comment 17:** Section 6.1.5 Uncertainty Analysis. February 1993 "Record of Comments Review"

The resolution comment from the initial IDHW-DEQ review of the June 1993 RI/BRA states that EPA will likely downgrade TCE to a "C" carcinogen. The status of TCE is currently under review by the CRAVE group. The suggested outcome of this review, at this time, is supposition. Until TCE is assigned a different carcinogenic category, it is necessary to regard it as a B2 carcinogen.

**Response:** The RI will continue to treat TCE as a B2 carcinogen. If EPA downgrades TCE to a C carcinogen, the RI will respond accordingly.

**Comment 18:** Volume III. Feasibility Study

Although several treatment methodologies were selected for initial evaluation, activated carbon adsorption was ranked as the best system for VOC treatment, based on established reliability, ease of use, cost, and other criteria.

Regardless of the individual alternative chosen, a significant quantity of spent carbon (estimated initial maximum per day 1,500 pounds) is, in our opinion, sufficient motivation to seek an alternative to the problems possibly encountered by the regeneration cycle, especially if off-site facilities are the only location available. We therefore encourage DOE-ID to revisit investigation into some of the other alternatives screened out in the Feasibility Study, such as bioventing, biofiltration, UV-Ozone, peroxide oxidation, thermal oxidation, etc., in pursuit of a fixed, on-site, permanent treatment methodology for OU 7-08. Activated carbon may indeed have it's place in treatment of OU 7-08 VOCs, but at this time we envision it's primary use as a possible final "polishing" step after the majority of organics have been destroyed by another technology.

**Response:** We agree that a significant quantity of spent carbon would be produced on a daily basis if used as the primary air treatment technology for OU 7-08. We expect that through the operations period of a VVE system applied at up to five extraction wells located at the RWMC, spent carbon would be generated at an average rate of approximately 950



pounds per day, based on a total air flowrate of 750 cfm containing carbon tetrachloride at 172 ppmv, trichloroethylene at 50 ppmv, and chloroform at 50 ppmv (See carbon usage calculations below. Note that adsorption capacities are approximate). Carbon tetrachloride is present at the most significant concentrations and would lead to the greatest usage of carbon. Its average concentration of 172 ppmv is based on the assumption that its steady-state concentration reached during VVE operations would decrease linearly from the current steady-state concentration of approximately 300 ppmv to a cleanup goal of approximately 45 ppmv (This cleanup goal is based on protection of groundwater, i.e., maintenance of MCLs).

### Carbon Usage Calculations

*Assume Vapor Temperature of 55°F (13°C)*

$\text{CCl}_4$ :

$$\frac{172 \text{ } \mu\text{ CCl}_4}{1 \times 10^6 \text{ } \mu\text{ air}} = \frac{152 \text{ g CCl}_4}{\text{g mol CCl}_4} = 0.0011 \text{ g CCl}_4/\text{ft}^3 \text{ air}$$

$$\frac{22.4 \text{ } \mu\text{ CCl}_4}{\text{g mol CCl}_4} = \frac{(273 + 13) \text{ K}}{273 \text{ K}}$$

$$\frac{0.0011 \text{ g CCl}_4}{1 \text{ } \mu\text{ air}} \times \frac{28.32 \text{ } \mu\text{ air}}{\text{ft}^3} \times \frac{750 \text{ ft}^3}{\text{min}} \times \frac{1,440 \text{ min}}{\text{day}} \times \frac{1 \text{ lb CCl}_4}{454 \text{ g CCl}_4} \times \frac{10 \text{ lb carbon}^{(1)}}{1 \text{ lb CCl}_4} = 741 \text{ lb carbon for CCl}_4$$

TCE:

$$\frac{50 \text{ l TCE}}{1 \times 10^6 \text{ l air}} = \frac{131 \text{ g TCE}}{\text{g mol TCE}} = 0.00028 \text{ g TCE/l air}$$

$$\frac{22.4}{286/273}$$

$$\frac{0.00028 \text{ g TCE}}{1 \text{ l air}} = \frac{28.32 \text{ l}}{\text{ft}^3} = \frac{750 \text{ ft}^3}{\text{min}} = \frac{1,440 \text{ min}}{\text{day}} = \frac{1 \text{ lb TCE}}{454 \text{ g TCE}} = \frac{100 \text{ lb carbon}}{15 \text{ lb TCE}} = 126 \text{ lb carbon for TCE}$$

$$\frac{50 \text{ l CHCl}_3}{1 \times 10^6 \text{ l air}} = \frac{119.5 \text{ g CHCl}_3}{\text{g mol CHCl}_3} = 0.00025 \text{ g CHCl}_3/\text{l air}$$

$$\frac{22.4}{286/273}$$

$$\frac{0.00025 \text{ g CHCl}_3}{1 \text{ l air}} = \frac{28.32 \text{ l}}{\text{ft}^3} = \frac{750 \text{ ft}^3}{\text{min}} = \frac{1,440 \text{ min}}{\text{day}} = \frac{1 \text{ lb CHCl}_3}{454 \text{ g CHCl}_3} = \frac{10 \text{ lb carbon}}{1 \text{ lb CHCl}_3} = 168 \text{ lb carbon for CHCl}_3$$

$$\text{Total Carbon Usage} = 741 + 126 + 168$$

$$= 1035 \text{ lb}$$

(1) Approximate values for carbon capacity from EPA/625/R-92/012

We disagree with your comment that alternative air treatment technologies have been "screened out." They have not been screened from future consideration (see discussion on screening in Sections 2.3, 2.5, 2.6, and 3.1). We have, however, switched our choice of representative process option for air treatment from carbon adsorption to catalytic oxidation. This switch was made after further investigation of carbon adsorption indicated that the issue of carbon regeneration will not be resolved in a timely, cost-effective manner. Also, further investigation of other potentially applicable treatment technologies such as biofiltration, ultraviolet photolysis, and catalytic oxidation (sometimes referred to as catalytic incineration) indicated that there are viable air treatment alternatives to carbon adsorption. Specifically, catalytic oxidation shows the greatest promise of treating the extracted VOCs from the OCVZ, especially when considering residual wastes and cost. Although we have selected catalytic oxidation as the representative process option for VOC-laden air treatment, the other process options, particularly carbon adsorption, may be selected incorporated into the remedial design either as the primary air treatment technology or as a "polishing" treatment technology. The need for final polishing of the air stream would be evaluated once the requirements for the treated air are defined (i.e., air quality criteria).

Comment 19: Table 1-3 Summary of Risk Assessment Results

The table shows a carcinogenic risk value of 2E-04 (ingestion of groundwater) for all residential receptors near or after the peak concentration year of 2074. Although this risk value correlates with the modeled groundwater concentrations at Figure 5-42, page 5-87 of Volume I, it would, for clarification purposes, and eventual public discussion, be helpful to list additional risk values before and during the peak concentration year, at locations which are nearer the modeled source disk.

Receptor	Scenario	RISK	
		Carcinogenic	Hazard Index
Residential Adult 200 meters 500 meters	Current	?	?
	(1992-2021)	?	?
	same		
Residential Adult 200 meters 500 meters	Institutional		
	(2065-2094)	?	?
	same	?	?

**Response:** As was discussed in the conference call on November 10, 1993, instead of adding risk values for non-existent residential receptors near the modeled source for the peak concentration year of 2074, it was decided to specify peak carbon tetrachloride concentrations in the SRPA beneath the SDA. This has been added to the table in a footnote.

**Comment 20:** Tables 2-1 and 2-2, Pages 2-5 and 2-7 respectively

It may be more appropriate to define "N/A" for the deletion of 1,1,1-Trichloroethane using language similar to that starting in line six ("hazard indices were not used"—) on Page 2-4. Although this compound is not a listed carcinogen, its dismissal from the PRG process needs more explanation in a public document.

**Response:** As a result of comments received from the EPA, Federal MCL-based PRGs were be used to define initial cleanup goals as opposed to risk based values. This results in the elimination of any references to the risk-based PRG calculations.

**Comment 21:** Section 2.3 Identification and Screening of Technologies and Process Options. Page 2-11, Middle Paragraph

IDHW-DEQ is aware of several projects at other DOE sites (Lawrence Livermore National Laboratory) that appear to offer potential technologies and process options for treatment of VOC vapor. We encourage DOE-ID to research the results of these current projects in light of other IDHW-DEQ comments concerning alternative technologies.

Response:

We are also aware of several projects at other DOE sites, including UV photolysis air treatment tests at Lawrence Livermore National Laboratory (LLNL) and a project testing ohmic heating and radio frequency heating for enhanced recovery of VOCs present in subsurface soils at the Savannah River Plant. The enhanced recovery tests at Savannah River also included treatment of VOC vapors at the surface.

Based on a Superfund Innovative Technology Evaluation (SITE) Emerging Technology Summary titled *Destruction of Organic Contaminants in Air Using Advanced Ultraviolet Flashlamps*, the photo-oxidation of TCE in air using an advanced ultraviolet (UV) source, and a pulsed xenon flashlamp, was examined at LLNL. The tests at LLNL concluded that effective destruction of TCE is achievable using UV treatment; however, toxic byproducts are produced. Further treatment of the photo-oxidation byproducts was recommended before full-scale operations. Although specific tests with carbon tetrachloride were not performed, it is expected that UV treatment of this compound would also likely result in degradation products requiring further treatment.

The two projects at Savannah focussed on the performance of enhanced recovery of subsurface VOC contaminants. Each of these projects treated VOC-laden air recovered with a vapor extraction system with a catalytic oxidation system. Although we did not have specific information on performance of the air treatment system, the primary contaminant being recovered was TCE. We've assumed that the catalytic oxidation system performed satisfactorily.

Comment 22:

Section 2.6 Cost Basis for Off-Gas Treatment, first paragraph

The statement is made that since the majority of the innovative treatment options are in the demonstration stage and due to the low concentrations of VOCs expected to be encountered at the OCVZ, carbon adsorption will be used to estimate off-gas treatment costs for alternative development. As stated above, several of the innovative treatment options (although they may be more expensive) are well past the demonstration stage and are worthy of further investigation as an alternative to carbon adsorption.

Response:

We agree with the comment in general and have performed a more thorough investigation of air treatment options for OU 7-08 (see response to comment #18). We wish to reiterate, however, that further investigation will be done between the FS and the ROD to refine specific elements of the air treatment system. For example, in order to bind the cost estimate, it has been assumed that individual "modular" catalytic oxidation units will be installed at each vacuum vapor

extraction location. These packaged units include main components such as a blower, instrumentation, catalytic oxidation chamber, and stack. During the design phase, the actual number of packaged units may be reduced, and multiple extraction wells connected to central treatment locations.

**Comment 23:** Section 4.4 Conclusions

Alternatives 1, 3a, 3b, 3c, are indeed protective of human health and the environment and are in compliance with ARARs. Nevertheless, in accordance with the "balancing criteria" as set forth in the National Contingency Plan and as applied in the Feasibility Study, IDHW-DEQ does not believe (at this time) that the criteria for reduction of "toxicity, mobility, or volume through treatment" has been necessarily met by standard carbon adsorption technology.

The VOCs are indeed captured but another waste form is generated that has to be further managed. The lengthy and continuing moratorium on off-site shipment and regeneration of INEL generated spent carbon, although an administrative, non-technical problem, plus our desire to see the implementation of a wholly on-site, in-situ or ex-situ remedy that destroys the contaminants at the source, convinces us, at this time, that we cannot fully evaluate the proposed alternatives without DOE-ID re-evaluation of the other types of alternatives that were dropped from further consideration.

**Response:** See response to comments 18, 21, and 22.

**Comment 24:** Appendix A. Detailed Cost Estimates

Although preliminary in nature, the estimates have cumulative management and overhead costs figured into the overall cost for each alternative. One cost figure encompassing management, overhead and profit is deemed sufficient for such a preliminary estimate.

**Response:** The cost estimates presented in the FS are prepared to consist with other FSs that have been submitted previously. Combining the line items indicated would result in a single, larger line item, without affecting the estimate itself. Since the change would not actually affect the document, the estimate was left as is, to maintain consistency across other FS cost estimates.